

[0039] FIG. 23 illustrates diagrams for explaining the operating method of the fifth exemplary embodiment;

[0040] FIG. 24 illustrates diagrams for explaining the operating method of the sixth exemplary embodiment;

[0041] FIGS. 25 through 27 illustrate diagrams for explaining the operating method of the seventh exemplary embodiment;

[0042] FIG. 28 illustrates diagrams for explaining the operating method of the eighth exemplary embodiment;

[0043] FIG. 29 illustrates diagrams for explaining the operating method of the ninth exemplary embodiment;

[0044] FIG. 30 illustrates diagrams for explaining the operating method of the tenth exemplary embodiment; and

[0045] FIG. 31 illustrates diagrams for explaining the operating method of the eleventh exemplary embodiment.

DETAILED DESCRIPTION OF THE INVENTION

[0046] The present invention will hereinafter be described in detail with reference to the accompanying drawings in which exemplary embodiments of the invention are shown.

[0047] FIG. 1 illustrates a block diagram of a mobile terminal in accordance with an embodiment of the present invention. From a viewpoint of constituent elements according to their functions, the mobile terminal in accordance with an embodiment of the present invention is described with reference to FIG. 1.

[0048] Referring to FIG. 1, a mobile terminal 100 may include a wireless communication unit 110, an audio/video (A/V) input unit 120, a user input unit 130, a sensing unit 140, an output unit 150, a memory 160, an interface unit 170, a controller 180, and a power supply unit 190. When the constituent elements are implemented in actual applications, two or more of the constituent elements may be combined into one constituent element or one constituent element may be divided into two or more constituent elements, if appropriate.

[0049] The wireless communication unit 110 may include a broadcasting receiving module 111, a mobile communication module 113, a wireless Internet module 115, a short-range communication module 117, a global positioning system (GPS) module 119 and so on.

[0050] The broadcasting receiving module 111 receives at least one of broadcasting signals and broadcasting-associated information from an external broadcasting management server through broadcasting channels. The broadcasting channels may include a satellite channel, a terrestrial wave channel and the like. The broadcasting management server can refer to a server for creating and transmitting at least one of broadcasting signals and broadcasting-associated information or a server for receiving at least one of previously generated broadcasting signals and previously generated broadcasting-associated information and transmitting it to a terminal.

[0051] The broadcasting-associated information can refer to information pertinent to a broadcasting channel, a broadcasting program and/or a broadcasting service provider. The broadcasting signal may include not only TV broadcasting signals, radio broadcasting signals, and data broadcasting signals, but also broadcasting signals in which TV broadcasting signals or radio broadcasting signals are combined with data broadcasting signals. The broadcasting-associated information may be provided over a mobile communication network. The broadcasting-associated information may be received by the mobile communication module 113. The broadcasting-associated information can exist in various

forms. For instance, the broadcasting-associated information can exist in the form of the electronic program guide (EPG) of the digital multimedia broadcasting (DMB), the electronic service guide (ESG) of the digital video broadcast-handheld (DVB-H) or the like.

[0052] The broadcasting receiving module 111 receives broadcasting signals using various broadcasting systems. In particular, the broadcasting receiving module 111 can receive broadcasting signals using a digital broadcasting system, such as the digital multimedia broadcasting-terrestrial (DMB-T), the digital multimedia broadcasting-satellite (DMB-S), the media forward link only (MediaFLO), the digital video broadcast-handheld (DVB-H), and the integrated services digital broadcast-terrestrial (ISDB-T). The broadcasting receiving module 111 may be constructed to be suitable for not only the digital broadcasting systems, but also the entire broadcasting systems that provide broadcasting signals. At least one of broadcasting signals and/or broadcasting-associated information, which are received through the broadcasting receiving module 111, may be stored in the memory 160.

[0053] The mobile communication module 113 transmits and receives radio signals to and from at least one of a base station, an external terminal, and a server over a mobile communication network. Here, the radio signals may include voice call signals, video call signals, or various forms of data according to transmission/reception of text/multimedia messages.

[0054] The wireless Internet module 115 refers to a module for wireless Internet access. The wireless Internet module 115 may be built in the mobile terminal 100 or external to the mobile terminal 100. The short-range communication module 117 refers to a module for short-range communication. Local area communication technology can employ Bluetooth, radio frequency identification (RFID), infrared data association (IrDA), ultra wideband (UWB), ZigBee or the like. The GPS module 119 receives position information from a plurality of GPS satellites.

[0055] The A/V input unit 120 is adapted to input audio signals or video signals and may include a camera 121, a microphone 123, and so on. The camera 121 processes image frames, such as still images or motion images, which are captured by an image sensor in the video call mode or the capturing mode. The processed image frames may be displayed on a flexible display 151.

[0056] Image frames processed by the camera 121 may be stored in the memory 160 or transmitted to the outside through the wireless communication unit 110. A plurality of the cameras 121 may be provided according to the configuration of a terminal.

[0057] The microphone 123 receives external sound signals in the call mode, the recording mode, the voice recognition mode, etc. and converts the received sound signals into electrical voice data. In the call mode, the processed voice data may be converted into a format, which may be transmitted to a mobile communication base station through the mobile communication module 113, and then output. The microphone 123 can employ a variety of noise removal algorithms for removing noise occurring in the process of receiving external sound signals.

[0058] The user input unit 130 generates key entry data, which is input by a user in order to control the operation of the terminal. The user input unit 130 may include a keypad, a dome switch, a touch pad (static pressure/capacitance), a jog